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ANTHROPOLOGY.¹

The Discovery of Aboriginal Netting Rope and Wood Implements in a Mud Deposit in Western Florida.—I was in Florida, last April, tarpon fishing, and had been drawn down in the course of this pursuit to the neighborhood of the settlement of Marco—a few frame houses on the south-east coast, collected near the pass of the same name through the reef. This pass is an important one, as importance goes in this thinly-peopled region, it being a road to the safe shelter in Marco Bay, and also to the little wooden pier in Collier's Creek, leading from Mr. Collier's store and house. And Marco has clearly, for very many years, been thus important. A Spanish settlement was remembered by a friend of the "oldest inhabitant," and, from the more distant past, numerous kitchen middens, formed chiefly of shell-heaps, bring us heavy conch axes or clubs sharpened at the point and bored for handles, smaller conch and other shell implements, bits of black pottery, shell sinkers, and various ornaments, all presumably relics of the mysterious Mound-Builders. Hard cement-like floors of former huts or cottages are reported to be visible in the locality—Collier's is, in fact, built on Mound-Builders' débris, and the rows of these shell-heaps show the extent of their occupation of the place, both in time and numbers. Yet, withal, there has been hitherto a complete absence of wooden articles or of any textile fabrics from the discovered remains.

Here and there shell-heaps form the banks of what are locally called "muck" tracts, former creeks or inlets, now filled with peaty mud, ill-smelling when first disturbed. The drier of these have been for years overgrown with trees and bushes, some of which trees are old and dead. This peat muck is valuable as a fertilizer, and it is this property that originally brought the special basin, that I shall describe later on, particularly under notice.

I had been looking with curious eyes at a somewhat similar formation in the neighborhood of Naples City, a Floridian watering place, of from ten to fifty inhabitants, according to the season of the year, where we had been staying at its comfortable little hotel. At Naples there is an ancient waterway now in various stages of peat muck and stagnant pool—an artificial canal, cut with the clearly deliberate purpose of forming a canoe or boat pass from the sea to the lagoon or bay.

¹ The department is edited by Henry C. Mercer, University of Penna., Phila.

PLATE XXXV.

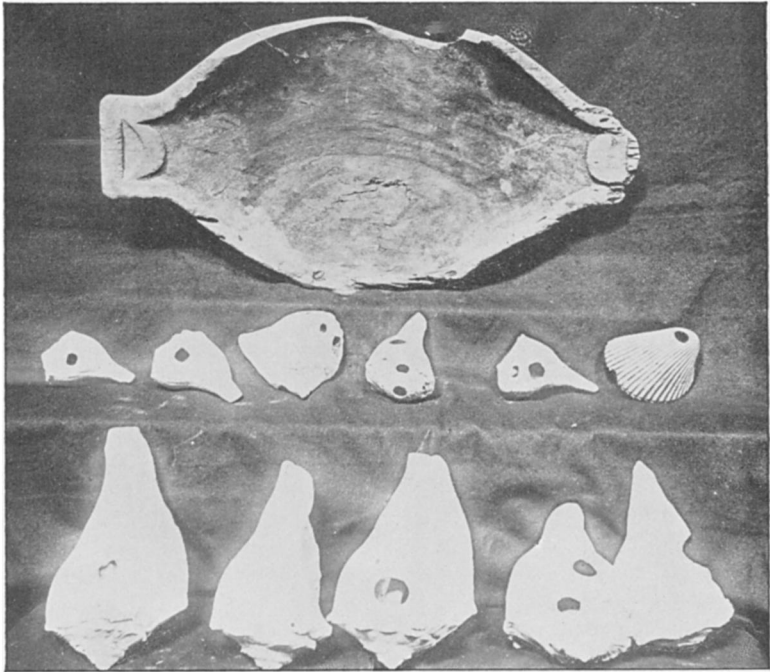


FIG. 1.

Aboriginal wooden trencher and perforated shells discovered by Lieutenant Colonel C. D. Durnford in a mud deposit near Marco, South-western Florida, in April, 1895.

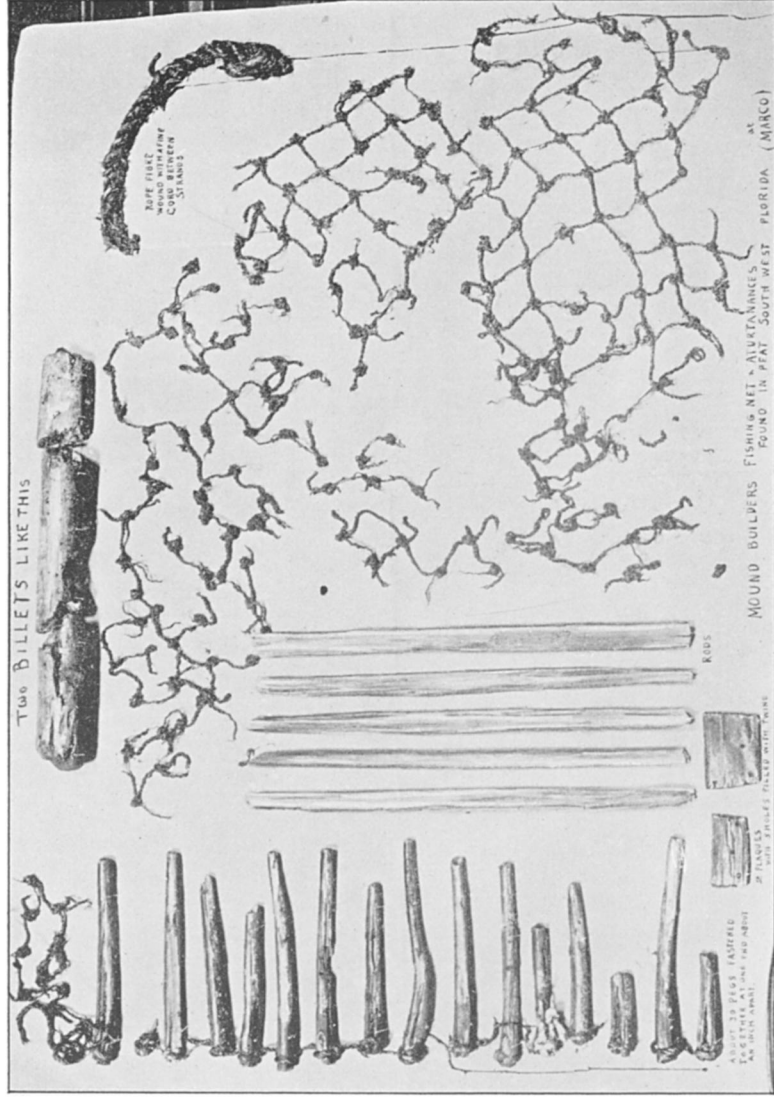


FIG. 12.

Aboriginal rope fish net and appurtenances discovered by Lieutenant Colonel C. D. Dunford, in a mud deposit near Marco, Southwestern Florida, in April, 1895.

It is cut large and well for a distance of considerably over half a mile, and is an undertaking so extensive that it would have been looked upon as unreasonable to have credited the Mound-Builders with it, were it not that there exist similar and longer canals formed, I believe indisputedly, by these prehistoric people from their mounds to some of the larger watercourses in the neighborhood of the Everglades.

The preservative properties of peat at home, and the family likeness of this peat muck to the British article in its moister and more boggy condition, made me very loth to forego an effort to find out the secrets that I felt sure must be hidden at the bottom of the canal, and of its adjacent peat basins. It was, however, far too extensive and difficult a work to attempt under the circumstances, although various means of doing so had been canvassed with the other guests of the hotel.

Archæological instinct having been aroused, an amateur exploring expedition was accomplished to a curious cement-capped mound in the neighborhood, of which more anon.

Mr. Charles Wilkins, of Rochester, N. Y., left me still at work at this mound on the second morning, and went on to Marco in the hopes of coming across tarpon there. Two days later he returned to Naples, having made a find in a muck basin at Marco that excited our interest greatly. The results of this find it will, perhaps, be out of place for me to describe in detail here; suffice it to say that the articles consisted of wooden cups, a carved head of an animal, conch cups and conch clubs, with remains of their handles, and other most interesting articles of wood, pottery and bone. He had been led into this search, I believe, by a casual find of some kindred objects by one of Mr. Collier's people when getting "muck" for fertilizing purposes. One of the wooden articles had remains of fire still on it, and the black rubbed off upon the fingers as if it had been charred yesterday, although it must have been done before 2 feet 6 inches of deposit had formed over it, and a tree, a foot across, had grown and died above the old fire-site.

I at once made preparations for going to Marco to try and add further to this treasure-trove, and a few days afterwards my wife and myself were off with a boatman for the long row south, within the reef, through bay and canal with a strong tide which turns for or against at the most odd places and times, seemingly without reason, until one learns the ways of this strange reason, and that all depends upon which of the passes intersecting the outer reef, the particular canal or bayou is ebbing or flowing through. A small bayou between two passes will have the ebb tide running out of both its north and south channels at

the same time. Through miles of narrow waterways we row or are rowed, waterways bordered by the green mangroves with oysters hanging from their boughs, oysters grating against the boat's bottom here and there as the low tide made it difficult to pass through the canals cut in the oyster bars between the different lagoons, bays, reaches, bayous, lakes, channels, creeks, rivers, passes, as the lanes and sheets of brackish and salt water are variously termed, according to their special size and nature.

On our way we stayed for a few minutes at the rookery, an island teeming with sea-birds and their nests. The latter were close together on the mangroves, under which we rowed, for it was high tide and the roots were covered with salt water. We took some young cranes and pelicans out of their nests and returned them ungrudgingly thereto after they had bitten our fingers. So also I returned one of two eggs, the inhabitant of which, a juvenile pelican, was in a sufficiently advanced stage of composition to squawk reproachfully at being shaken.

We arrived at Collier's, Marco, at sunset, and the sandflies and mosquitoes being in full charge, I did not examine the muck-bed until next morning, when, with the aid of a "smudge," the smoke of which was less objectionable than the sandflies, and a hat-net for the mosquitoes, we proceeded to work. The basin is an oval about 150 feet long and 120 feet across (I write from memory), filled with peat muck, the bottom a hard shell bed that the sounding-wire, when pushed through the soil, struck each time in regular grade, giving, as far as I could tell from the cursory trials that I made, an even saucer-like pool, formerly filled with water, now with the peat muck deposits of centuries of disuse, the flat surface of which is covered with grass and trees, young and old, alive and dead. It is situated about 200 yards up from Collier's on the same bank of the creek, *i. e.*, the right bank. All the way up the creek rows of old oyster-shell banks or mounds are met with at right angles to the creek and to the road by the creek side. They have narrow openings, over which, at high tide there is, in one or two cases, still a trickle of water. At other times the road is dry over what used to be old canals or small side creeks, in which the canoes lay when the old world people sorted their drafts of fishes, opened their oysters or cooked their fish or game.

That these operations were habitually carried out here there is too much evidence to doubt.

On the morning after our arrival, I obtained the services of two of Mr. Collier's employés to dig in the peat basin. The pits already made by Mr. Wilkins were half filled with water, which percolates into all

of them a few hours after they are dug out. They average in size about 4 feet 6 inches in length and 2 feet 6 inches to 3 feet in width and depth.

I decided to dig in the direction of the shore, that is, between the last pit opened—from which we removed the water—and the nearest exposed shell-bank, perhaps 20 feet away.

Hardly had two barrow-loads of the earth been taken out when the finding and excitement, on my part, at least, began. One after another they came, the first of importance being a wooden tray or trencher, the rounded feel of which at first made us believe that we had found a canoe, two spikes of a fish, etc.

The trencher (See Plate XXXV) (which, with other of the articles found, is now in the British Museum) is of wood, in shape oval, with ends extended, squared and notched to form handles for the fingers to grip more readily. It is hollowed out and was well made. Underneath it is flattened, so that placed on a level surface it is capable of being rocked lengthways only. It is in a good state of preservation. Its length is 19 inches by 11 inches broad and 4 inches deep; in thickness it varies from $\frac{3}{8}$ to $\frac{3}{4}$ of an inch.

One of the next articles that we came upon, also, I believe, unique, was a curious funnel made of a clam-shell; it is shown in the accompanying photograph (See Plate XXXV). It had a hole, about $\frac{7}{8}$ of an inch in diameter, cut through its deepest portion, and there were signs of some brown fluid having been poured through it. Small pieces of black pottery and a small conch or two pierced for handles and sharpened, were also discovered; but the most curious of these old remains was the fishing-net which lay close to the trencher and to the other articles. It was well and evenly made, of about a 2-inch mesh, netted with a two-strand cord, the strands being spun from some vegetable fiber, perhaps cocanut or banana bark. Of this net, (See Plate XXXVI) a specimen of which has been deposited at the Museum of Archæology of the University of Pennsylvania, only a small portion was obtained, and that, unfortunately, in a very rotten condition, but a small piece of rope, an inch in diameter, of a coarser fibre, the division between its strands being interwound with a fine cord, and a number of interesting wooden appurtenances of the net were also discovered. (See Plate XXXVI). These consisted of five wooden sticks about 20 in. x 1 in. of irregular section, apparently made of the central palm-leaf stem, heavy and strong; their use is difficult to determine. There is no apparent mark of cords having been used in connection with them. There were also about thirty pins, made of an

exceedingly light, tapering, reedy wood, each about $9\frac{1}{2}$ inches long by 1 inch in diameter at their thickest end. They were fastened together at one end—the thickest—at intervals of an inch, by a strong cord about $\frac{3}{8}$ of an inch in diameter. Each pin had a hole bored in it and a groove cut round the head to receive the cord, which, passing through the hole, was knotted after one turn and a half round the groove. There are also two small plaques of thin wood about $\frac{1}{4}$ of an inch thick, quadrilateral in shape, the sides measuring severally $3\frac{3}{8}$ inches, $2\frac{3}{8}$ inches, 3 inches and $2\frac{3}{8}$ inches, the short equal sides making with the longest equal interior angles. Of one of these plaques only half was found, but they are evidently the same in design. The complete one contained five holes about $\frac{1}{4}$ inch in diameter; the three holes in the incomplete one corresponded in position with the three in the same part of the complete. The holes contain remains of cord which evidently had run freely through them. (See Plate XXXVI).

Two round wooden billets, about 17×3 inches, and one irregular block, about 5 or 6 inches across in its thickest portion, completed the appurtenances which seemingly form some kind of trapping arrangement to the net. Everything was found resting on the shell bottom of the "basin," and all nearly together. It seems to point to some sudden desertion of the spot, whether from fear or for some hurried foraging expedition or other reason. From whatever cause the place was left, the party did not return, though certainly intending to do so, as witness the beauty of the cup conches found by Mr. Wilkins, and the value of the nets and wooden articles, the condition of which, when found, points to their having been left there in excellent order.

The net was certainly placed where it lay by man, for the five loose sticks which served some unknown purpose were on the top of the bunch of the thirty or so smaller pins, and lying as if placed there by one hand-hold. These smaller pins were piled in uncertain rows as to number and position, all seemingly tied together and at one end only. The idea that the whole position gave, was the arrival home of a fishing canoe, the net with its appurtenances being taken out, the heavier round billets (purpose unknown) first laid on the beach with the block between or next them, the trapping arrangements of thirty pins placed on the billets with the five sticks loose over the whole. The two small plaques, probably part of the trapping arrangement also, were a short distance above the main heap.

The net was placed joining the trapping-pins, but lower down the beach, and the rope lower still, near them being the necklace of fish fin-bones in a cup. Unfortunately, one of my assistants working in

the pit which I had cleared of water, broke through into the next one, just as the rope was discovered, and the water poured in and flooded both the one that had been freed, and the one that had just been opened, and not being then sure of the nature of my find, I gave up and left off at that point. I caused several other pits to be dug, but with little result.

As I could learn of no similar ancient articles having been discovered in this region, and as their nature, position and surroundings pointed to the probability of their having belonged to some uncivilized race who had inhabited this spot centuries ago, I preserved them as well as I could, keeping them wet until I was able to show them to experts. At the University of Pennsylvania I was fortunate in meeting not only Mr. Stewart Culin,¹ but also Mr. Frank Hamilton Cushing,² from whom I learnt the antiquity of these relics and the archaeological value of the discovery. Mr. Cushing, whose experience and knowledge of these subjects is probably without parallel, considers them to be of pre-Columbian origin, and as, under the direction of Dr. William Pepper, Mr. Cushing is, I hear, to undertake a further exploration, we will, I hope, before long, be in possession of fuller information concerning the race who made use of them.

I mentioned, in the earlier portion of this account, a curious cement-capped mound which was partially examined by some of the tarpon fishers at Naples. The mound had been for some time the subject of discussion of the guides and hunters, and had created no small curiosity in the mind of at least one of the guests at the hotel.

This, as related by them, was the largest of three sandhills near Sandhill Bay (lagoon), not far from little Marco. The hills (I write from memory) are about a hundred yards apart, and joined by low ridges in a slight curve. The story of the guides was roughly as follows:

The mound was the most easterly of the three, and was about 30 feet above the sea level, perhaps the highest land between Naples and Cape Sable, a distance of 50 miles, excepting one—Caximbas Mound, the summit of which may be 40 feet above the sea. It lies about ten or twelve miles from Naples and five or six from Marco, and having water on two sides at a distance from its centre of about 70 or 80 yards on one side, and, perhaps, 100 yards on the other. It had been opened

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² Ethnologist Smithsonian Institute, Bureau of American Ethnology, Washington, D. C.

about two years before; first by two of the local hunters and guides, including one of the Weeks brothers, who came afterwards with our party, and again by one of the guides named Walker, who was also with us. These told the same story, viz.: that it was covered in by a regular "bottle" top of cement—hard stone cement—smoothed and even on the inside at the point where the men had got through, which they had accomplished at the summit. They found one skeleton which was described as lying about 4 feet below the cement. The cement was said to be more than a foot thick, and so hard that they could only cut just enough away to allow the passage of a man. Below it was a soft, fine, dry sand. They soon had to stop digging when they began piling up this sand on the edge of the hole, as it came falling in again. They did not get more than 4 or 5 feet below the cement, and found nothing but this fine, soft sand; in some parts it was "just the color of dripping blood, so red, not ordinary sand red, but as if it had been painted red, just like dripping blood," so said Bill Weeks, one of the hunters. They were looking for treasure, of course. This cement work and the blood-red sand being quite out of the common, Dr. Durrett, of Louisville, Ky., and myself, with a party of boatmen and hunters, therefore set out one morning, prepared to cut more deeply into this mound, and did so. We did not, by any means, fully explore it, but we cut into and across the "cement" dome, and found the guides' account to be practically correct. The dome is composed of a gray-colored close-binding mud. The blood-red sand or powder we did not come upon, but it is quite possible that that found by the hunters was some of the same hematite found by Professor Othniel Marsh in the Taylor Mound near Newark, Ohio, and which he supposed to have been used as paint. A description of this will be found in the *American Journal of Science and Arts*, Vol. XLII, July, 1866.

The remains of the hunters' former dig for treasure lay about the mouth of the small man hole made by them through the cement, and in clearing away these and the shrubs near, we came upon several of the old and whitened bones that had been thrown out at that time, including half an arm bone that had been splintered, apparently, by some sharp weapon. Later on, the other half of the same bone, the fractures fitting perfectly, was produced, yellow from the sand below where it had been sheltered by the cement from all rain, except the direct fall into the small man-hole.

I am writing this description of our partial examination of this mound, solely on account of the curious, and, I believe, unique, rude dome formed over, so far as we know at present, one skeleton buried in

soft sand. We found therein no relics except these bones, which were in good preservation. The base of the cement dome rests on a ring of shells—chiefly oyster shells—evidently placed there to receive it, about 60 feet in circumference, 6 inches deep, and 18 inches across. The ring was laid upon sand. Rather above the level of this ring and in the centre, had been placed the body, and apparently over this had been made a rounded hill of fine sand, and again over this had been plastered the layer of light slate-gray mud, which, whatever had been the intention of the depositors, now remains as a waterproof, solid, self-supporting dome, about 15 to 18 inches thick, and 20 feet or so across, and perhaps 5 or 6 feet high. It defied a spade or ordinary hoe, requiring a grubbing-hoe and, in places, a crow-bar to pierce it.

On my return the second day in company with Mr. Wilkins, who remained a short time—Mr. Durrett, who had camped near the spot, having left earlier in the morning after completing the cutting across through the north side—I laid bare the whole inner base of one side of the dome; the sole result was the verification of the fact that the dome was evenly formed interiorly, and rested on the evenly formed shell-ring.

I am personally of opinion that the hardening quality of this slate mud was understood and deliberately utilized by these people. Floors of prehistoric huts and other buildings are said to exist in the neighborhood, formed of the same material, and a piece of the cement carried away by myself has hardened perceptibly since its exposure to the air. It is difficult to conceive of an observant people, who were also capable of making very fair pottery, not knowing or noticing this property of a material used by themselves in such a position. It has, however, been suggested, and, though not agreeing with the suggestion, I give it as a possibility, that the cement-forming capabilities of this gray mud were not understood by the builders, and that it was not intentionally employed to this end, but was simply mud from the nearest lagoon, placed over the sand-heap to prevent the sand from blowing away, and laying bare the remains. This hypothesis is based upon the uneven quality of the cement cover—that next the northern lagoon being softer and coarser than that next the south. Further enlightenment will probably be thrown upon this question also by the expedition which Dr. William Pepper is sending to Florida in the coming autumn.

—C. D. DURNFORD.